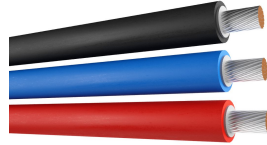


## TECSUN(PV) H1Z2Z2-K 1/1kV AC (1,5/1,5kV DC) EN 50618; CPR



### Application

PRYSMIAN Solar cables TECSUN (PV) H1Z2Z2-K acc. to EN 50618, are intended for use in Photovoltaic Power Supply Systems at nominal voltage rate of 1,5/1,5kV DC.

They are suitable for applications indoor and/or outdoor, in industrial and agriculture areas, in/at equipment with protective insulation (Protecting Class II), in explosion hazard areas (PRYSMIAN Internal Testing). They may be installed fixed, freely suspended or free movable, in cable trays, conduits, on and in walls.

The data sheet specification "PRYSMIAN internal test" means "test is not part of the type approval according to EN50618 by an NRTL" (Nationally Recognized Testing Laboratory).

These additional internal tests are carried out at regular intervals - including the type tests according to EN50618 - in our own test laboratories and confirm the outstanding properties of the TECSUN (PV) H1Z2Z2-K.

In addition, we guarantee consistent quality for 20 years with the world's only VDE-certified solar cable.

TECSUN(PV) H1Z2Z2-K cables are suitable for direct burial (PRYSMIAN Internal Testing), where the corresponding guidelines for direct burial shall be considered.

### Global data

Brand	TECSUN(PV)
Type designation	H1Z2Z2-K
Standard	EN 50618 IEC 62930
Certifications / Approvals	VDE Approval Mark ( <VDE> ); TÜV-Rheinland Certificate nr. 60103637
Construction product regulation (CPR)	CPR acc. to DIN EN 50575, class and DoP-Code: see data table below DoP: see <a href="http://www.prysmiangroup.com/cpr">www.prysmiangroup.com/cpr</a>

### Notes on installation

Notes on installation	Thanks to more than 20 years of positive experience with direct burial, not only according to the internal tests performed, but also to the successful installation in PV plants worldwide, the TECSUN(PV) cables are suitable for direct burial in ground. The corresponding installation guidelines shall be taken in consideration.
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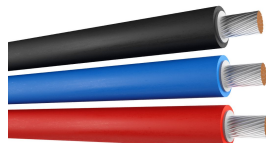
### Design features

Conductor	Electrolytic tinned copper, finely stranded class 5 in accordance with IEC 60228
Insulation	Cross-linked HEPR 120°C
Outer sheath	Cross-linked EVA rubber 120°C. Insulation and sheath are solidly bonded (Two-layer-insulation)
Outer sheath colour	Black (different colours on request)

### Electrical parameters

Rated voltage	AC: 1,0/1,0 kV DC: 1,5/1,5 kV
Max. permissible operating voltage AC	1,2/1,2 kV
Max. permissible operating voltage DC	1,8/1,8 kV
Test voltage	AC: 6,5 kV / DC: 15 kV (5 Min.)
Current Carrying Capacity description	According to EN 50618, Table A-3
Electrical Tests	Acc. to EN 50618, Table 2: <ul style="list-style-type: none"> <li>• Conductor Resistance;</li> <li>• Voltage Test on completed cable (AC and DC);</li> <li>• Spark Test on insulation; Insulation Resistance (at 20°C and 90°C in water);</li> <li>• Insulation Long-Term Resistance to DC (10 days, in 85°C water, 1,8 kV DC);</li> <li>• Surface Resistance of Sheath</li> </ul> PRYSMIAN internal test: <ul style="list-style-type: none"> <li>• AD8 (acc. to UL44 sec. 5.4 (&gt;92 weeks)</li> <li>• Dielectric Strength;</li> <li>• Insulation Resistance at 120°C in air.</li> </ul>

## TECSUN(PV) H1Z2Z2-K 1/1kV AC (1,5/1,5kV DC) EN 50618; CPR



### Chemical parameters

#### Performance against fire

Acc. to EN 50618, Table 2:

- Single Cable Flame Test per EN 60332-1-2;
- Low Smoke Emission per EN 61034-2 (Light Transmittance > 70%);
- Halogen-free per EN 50525-1, Annex B.

PRYSMIAN internal test:

- Multiple Cable Flame Test per EN 50305-9;
- Low Toxicity per EN 50305 (ITC < 3).

#### Resistance to oil

PRYSMIAN internal test, on sheath:

- 24h, 100°C (meets VDE 0473-811-404, EN 60811-404).

#### Weather resistance

Acc. to EN 50618, Annex E and Table 2:

- UV Resistance on sheath: tensile strength and elongation at break after 720h (360 Cycles) of exposure to UV lights acc. to EN 50289-4-17, Method A;
- Ozone resistance: per Test Type B (EN 50396)
- AD7 (acc. to EN 50525-2-21 appendix E)

PRYSMIAN internal test:

- Water Absorption (Gravimetric) per EN 60811-402.
- AD8 (acc. to EN 50525-2-21 appendix E)

#### Acid and alkaline resistance

Acc. to EN 50618, Annex B:

- 7 days, 23°C (N-Oxalic Acid, N-Sodium Hydroxide) acc. to EN 60811-404.

#### Ammonia Resistance

PRYSMIAN Internal Testing:

- 30 days in Saturated Ammonia Atmosphere.

#### Environmentally Friendly

TECSUN(PV) cables comply with the RoHS directive 2011/65/EU of the European Union.

### Thermal parameters

#### Max. operating temperature of the conductor

Max. 90°C at conductor (lifetime acc. to Arrhenius-Diagram TECSUN = 30 years).

20.000 hours of operation at conductor temperature of 120°C (and 60°C ambient temperature) are permitted.

#### Max. operating temperature of the conductor

90 °C

#### Max. short circuit temperature of the conductor

250 °C (5 s.)

#### Ambient temperature (for fixed and flexible installation)

Installation and handling: -25°C up to +60°C

In operation: -40°C up to +60°C

#### Resistance to cold

Acc. to EN 50618, Table 2:

- Cold Bending Test at -40°C acc. to DIN EN 60811-504;
- Cold Elongation Test at -40°C acc. to DIN EN 60811-505;
- Cold Impact Test at -40°C acc. to DIN EN 60811-506 and EN 50618 Annex C.

#### Damp-Heat Test

Acc. to EN 50618, Table 2:

- 1.000h at 90°C and 85% humidity (test acc. to EN 60068-2-78).

### Mechanical parameters

#### Max. tensile load

15 N/mm<sup>2</sup> in operation, 50 N/mm<sup>2</sup> during installation

#### Bending radii min.

Acc. to EN 50565-1

#### Abrasion resistance

PRYSMIAN Internal Testing:

- Acc. to DIN ISO 4649 against abrasive paper;
- Sheath against sheath;
- Sheath against metal;
- Sheath against plastics.

#### Shrinkage Test

Acc. to EN 50618, Table 2:

- Maximum Shrinkage <2% (test acc. to EN 60811-503).

#### Pressure Test at High Temperature

PRYSMIAN Internal Testing:

- <50% acc. to EN 60811-508.

#### Dynamic Penetration Test

Acc. to EN 50618, Annex D:

- Meets requirements of EN 50618.

#### Shore-Hardness

PRYSMIAN Internal Testing:

- Type A: 85 acc. to DIN EN ISO 868

#### Durability of Print

Acc. to EN 50618:

- Test acc. to EN 50396.

#### Rodent resistance

Safety can be optimized by utilizing protective hoses, or protective element, such as a metallic screen braid.

Number of cores x cross section	Colour	Part number	Conductor diameter max. mm	Outer diameter min. mm	Outer diameter max. mm	Bending radius fixed min. mm	Weight (approx.) kg/km	Permissible tensile force max. N	Conductor resistance at 20°C max. Ω/km	Current carrying capacity for single cable free in air (60°C ambient temp.) A	Short Circuit Current (1s. from 90°C to 250°C) kA	Current carrying capacity for single cable on a surface (60°C ambient temp.) A	CPR fire class
1x1,5	black	20154830	1.6	4.5	5.1	15	35	23	13.7	30	0.21	29	Dca, s2, d2
1x2,5	black	20154650	1.9	4.8	5.4	17	46	38	8.21	41	0.36	39	Dca, s2, d2
1x2,5	red	20167176	1.9	4.8	5.4	17	46	38	8.21	41	0.36	39	Dca, s2, d2
1x2,5	blue	20167177	1.9	4.8	5.4	17	46	38	8.21	41	0.36	39	Dca, s2, d2
1x4	black	20149014	2.4	5.3	5.9	18	61	60	5.09	55	0.57	52	Dca, s2, d2
1x4	red	20165491	2.4	5.3	5.9	18	61	60	5.09	55	0.57	52	Dca, s2, d2
1x4	blue	20165492	2.4	5.3	5.9	18	61	60	5.09	55	0.57	52	Dca, s2, d2
1x6	black	20149015	2.9	5.8	6.5	20	80	90	3.39	70	0.86	67	Dca, s2, d2
1x6	red	20165493	2.9	5.8	6.5	20	80	90	3.39	70	0.86	67	Dca, s2, d2
1x6	blue	20165494	2.9	5.8	6.5	20	80	90	3.39	70	0.86	67	Dca, s2, d2
1x10	black	20149016	4	7	7.6	23	122	150	1.95	98	1.43	93	Dca, s2, d2
1x10	red	20165495	4	7	7.6	23	122	150	1.95	98	1.43	93	Dca, s2, d2
1x10	blue	20165496	4	7	7.6	23	122	150	1.95	98	1.43	93	Dca, s2, d2
1x16	black	20154857	5.6	9	9.8	30	200	240	1.24	132	2.29	125	Eca
1x16	red	20167178	5.6	9	9.8	30	200	240	1.24	132	2.29	125	Eca
1x16	blue	20167179	5.6	9	9.8	30	200	240	1.24	132	2.29	125	Eca
1x25	black	20154858	6.4	10.4	11.2	34	290	375	0.795	176	3.58	167	Eca
1x35	black	20154859	7.5	11.7	12.5	50	400	525	0.565	218	5.01	207	Eca
1x50	black	20154860	9	13.5	14.5	58	560	750	0.393	276	7.15	262	Eca
1x70	black	20156711	10.8	15.5	16.5	66	750	1050	0.277	347	10.01	330	Eca
1x95	black	20156712	12.6	17.7	18.7	75	970	1425	0.21	416	13.59	395	Eca
1x120	black	20156713	14.2	19.2	20.4	82	1220	1800	0.164	488	17.16	464	Eca
1x150	black	20156714	15.8	21.4	22.6	91	1500	2250	0.132	566	21.45	538	Eca
1x185	black	20153870	17.4	23.7	25.1	101	1840	2775	0.108	644	26.46	612	Eca
1x240	black	20157001	20.4	27.1	28.5	114	2400	3600	0.082	775	34.32	736	Eca
1x300	black	20267011	22.9	29	32	132	3000	4500	0.0654	898	42.93	855	Eca

Standard delivery length is 500m. Other lengths are available on request.

All cross sections are also available in red and blue colors.

Note: „If required, TECSUN(PV) H1Z2Z2-K cables are also available with customized surface marking“.